

- Generously apply sunscreen daily. Sunscreen should have a sun protection factor (SPF) of 15 or higher and offer broad-spectrum protection (both UVA and UVB protection). Sunscreen should be applied at least 20 minutes before going outdoors to all skin that will be exposed such as the face, ears, and hands.
- Reapply sunscreen every 2 hours, after swimming or sweating, even on cloudy days.



A dermatologist is a physician who specializes in treating the medical, surgical, and cosmetic conditions of the skin, hair, and nails. To learn more about AKs and skin cancer, log onto [www.aad.org](http://www.aad.org), [www.skincarephysicians.com](http://www.skincarephysicians.com), or call toll-free (888) 462-DERM (3376) to find a dermatologist in your area.

## TO LEARN MORE

Contact the American Academy of Dermatology (AAD), which represents almost all dermatologists in the U.S. and has more than 15,000 members worldwide. Most of the Academy's members are board-certified in dermatology, which means they have completed a three-year residency and passed a rigorous two-part test administered by the American Board of Dermatology.

Log on to the Academy's Web site at [www.aad.org](http://www.aad.org), and you can:

- Locate a dermatologist in your area;
- Read information on skin conditions, including more than 65 brochures on individual dermatology topics;
- Get advice about skin cancer prevention and detection, and other ways to care for your skin; and
- Learn about the latest dermatologic procedures and how to make informed decisions about having those procedures.

All content solely developed by the American Academy of Dermatology.



Physicians Dedicated to  
Excellence in Dermatology™

Printing and distribution supported in part by:



© 2009 American Academy of Dermatology  
Images used with permission of the American Academy of Dermatology  
National Library of Dermatologic Teaching Slides

American Academy of Dermatology  
P.O. Box 4014, Schaumburg, Illinois 60168-4014  
AAD Public Information Center: (888) 462-DERM (3376)  
AAD Member Resource Center: (866) 503-SKIN (7546)  
Web: [www.aad.org](http://www.aad.org)

# Actinic Keratoses

AMERICAN ACADEMY OF DERMATOLOGY



Physicians Dedicated to  
Excellence in Dermatology™

Whether your  
skin needs  
medical,  
surgical or  
cosmetic  
treatment,  
trust the  
expert care  
of a  
board-certified  
dermatologist.

## ■ CHEMICAL PEELING

A chemical solution is applied to the skin in order to peel away the AKs and damaged skin. As the treated skin peels off, new healthy skin replaces it. It is common to experience discomfort, redness, and crusting in the treated areas.

## ■ LASER SKIN RESURFACING

A laser may be used to remove AKs and damaged skin. A common side effect is redness immediately afterward. It may take a week or two for the skin to heal.

Research and development of other treatments for AKs is ongoing. No one therapy works on all AKs or in all individuals.

## PREVENTING ACTINIC KERATOSES

This should start early in life. Sun damage begins in childhood and puts the child at risk for AKs and skin cancer later in life. However, it is never too late to prevent new AKs — even in adults who have AKs.

## THE BASICS OF ACTINIC KERATOSES PREVENTION:

- Seek shade when appropriate, remembering that the sun's rays are strongest between 10 a.m. and 4 p.m. If your shadow is shorter than you are, seek shade.
- Wear protective clothing, such as a long-sleeved shirt, pants, a wide-brimmed hat and sunglasses, where possible.

# Actinic Keratoses

Actinic keratoses (AKs) are common skin lesions. Caused by years of sun exposure, AKs also are called "solar keratoses" or "sun spots." Fair-skinned people are more susceptible, and AKs tend to appear on skin that receives the most sun. The forehead, ears, neck, arms, hands, lower lip, a bald scalp, and lower legs of women are common sites. No matter where AKs develop, they are considered the earliest stage in the development of skin cancer.



Actinic keratoses of the scalp

Like skin cancer, AKs develop when ultraviolet (UV) light from the sun damages cells in the skin. When AKs form, the affected skin cells are the keratinocytes. These tough-walled cells make up 90 percent of the epidermis (the outermost

layer of skin) and give the skin its texture. Changes to these cells cause the skin to become rough and scaly. Bumps or small horn-like growths form. If the cells continue to change, AKs can progress to squamous cell carcinoma, a type of skin cancer.

## WHAT ACTINIC KERATOSES LOOK LIKE

The typical actinic keratosis (AK) is a dry, scaly, rough bump that is skin-colored to reddish-brown. The lesion may range from the size of a pinhead to larger than a quarter. Some skin-colored AKs may be easier to feel than see. When touched, these often feel like sandpaper.

Sometimes an AK grows rapidly upward, causing it to resemble the horn of an animal. When this happens, the AK is called a "cutaneous horn." Horns vary in size from that of a pinhead to a pencil eraser. Some horns grow straight; others curve. Cutaneous horns often form on the ears, which tend to receive years of sun exposure.



Actinic keratoses near the ear



A fair-skinned older person has numerous crusted papules on the backs of both hands

AKs also commonly form on the lower lip. An AK on the lower lip is known as "actinic cheilitis" and looks like a diffuse, scaly patch on a dry, often cracked lip.

No matter where an AK forms, it can seem to disappear for weeks or months and then return. This also can happen when an AK is scraped off. The damaged cells continue to grow, and the AK returns. A dermatologist can determine when to treat AKs and how.

## TREATING ACTINIC KERATOSES

When treating AKs, dermatologists may use one therapy or combine therapies. Some available treatments for actinic keratoses are:

### CRYOSURGERY

The most common treatment for AKs, cryosurgery involves applying a cryogenic (extremely cold) substance, usually liquid nitrogen, to the lesion. This freezes the surface skin, causing the skin to flake off. New skin forms. The main side effect is skin redness; blistering may occur.

## ■ TOPICAL CHEMOTHERAPY

To destroy AKs, patients apply a cancer-fighting cream or lotion (e.g., 5-fluoruracil,) to their skin. Red spots may remain on the treated skin for a while. Another treatment option such as cryosurgery may be necessary to treat thicker lesions that a cream or lotion cannot fully penetrate.

## ■ TOPICAL IMMUNOTHERAPY

When applied to the skin, this medication (e.g., imiquimod) stimulates the patient's own immune system to destroy the AKs and accompanying damaged skin cells. Patients apply this medication at home as directed by their dermatologist.

## ■ TOPICAL NSAID (NON-STEROIDAL ANTI-INFLAMMATORY DRUG)

Patients apply this medication (e.g., sodium diclofenac gel) to the lesions as directed. During treatment, patients should avoid the sun. The medication works to destroy the AKs and accompanying solar damage.

## ■ PHOTODYNAMIC THERAPY

A solution that makes the skin more sensitive to light is applied and left on the skin. After a few hours, the treated skin is exposed to "blue" or "red" light, which activates the solution and destroys the AKs. Areas of redness may develop in treated regions. These will fade after several days.